



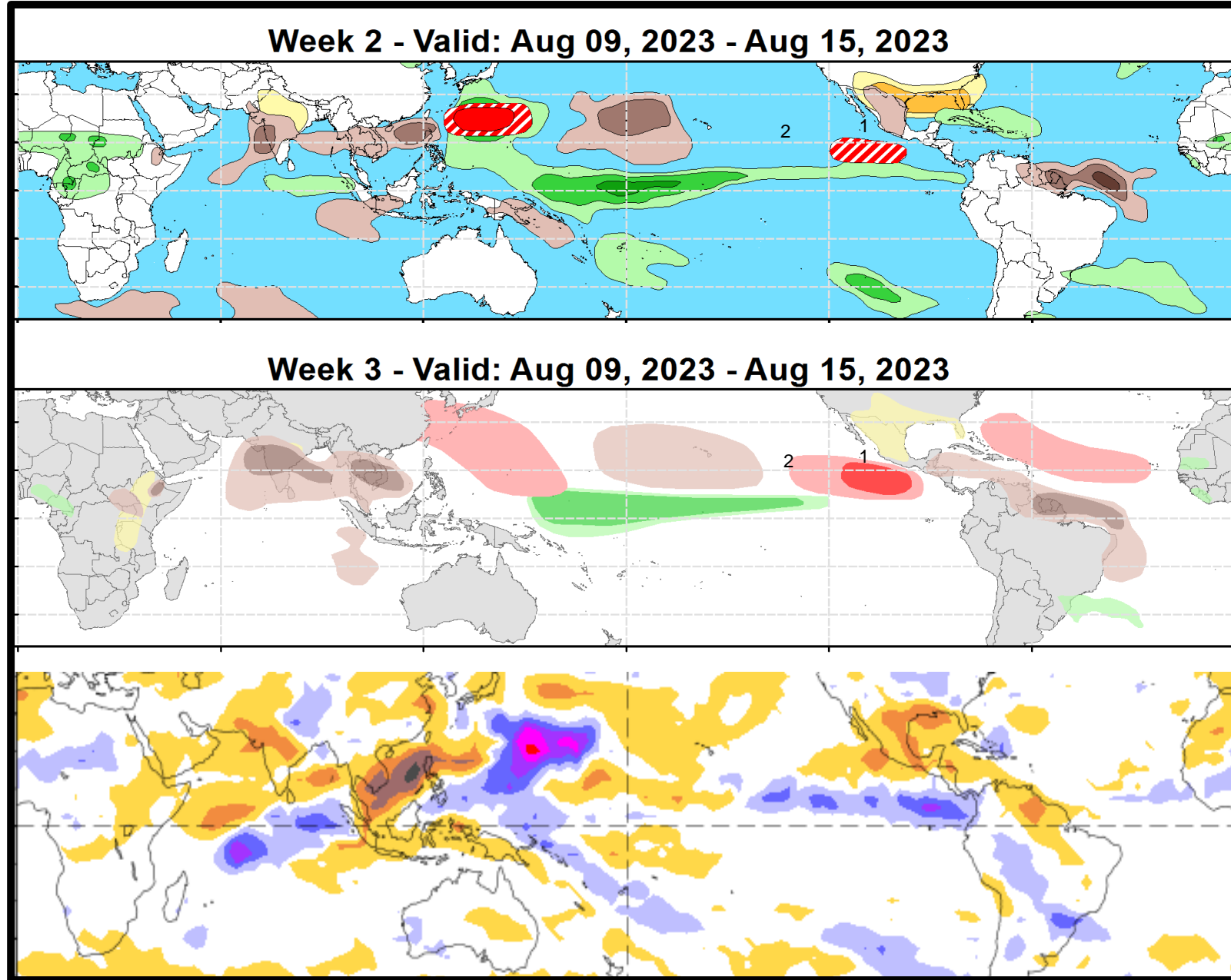
Weeks 2-3 Global Tropics Hazards Outlook

8/15/2023

Daniel Barandiaran
NWS / NCEP / Climate Prediction Center

Outlook Review: TC development & anomalous precipitation during the past week

- 1: Fernanda, 8/12
- 2: Greg, 8/14



Synopsis of Climate Modes:

ENSO: (Aug 11, 2022 Update) *next update on Thursday, Sep 8th*

- ENSO Alert System Status: [El Niño Advisory](#)
- La Niña is expected to continue, with chances for La Niña gradually decreasing from 86% in the coming season to 60% during Dec-Feb 2022-23.

MJO and other subseasonal tropical variability:

- The RMM index has been stronger lately than in July, but upper-level velocity potential anomaly fields and a lack of eastward propagating features continue to reflect disorganized intraseasonal activity.
- Dynamical model RMM forecasts generally favor weakened MJO activity during the next several weeks. Some extended range solutions point to possible reemergence over the western Pacific or the western Hemisphere later in August, however ensemble spread remains very high and forecast confidence is limited.
- Even without a coherent MJO, upper-level velocity potential anomaly forecasts feature a large-scale environment conducive for tropical cyclone (TC) development in the eastern Pacific and Atlantic.

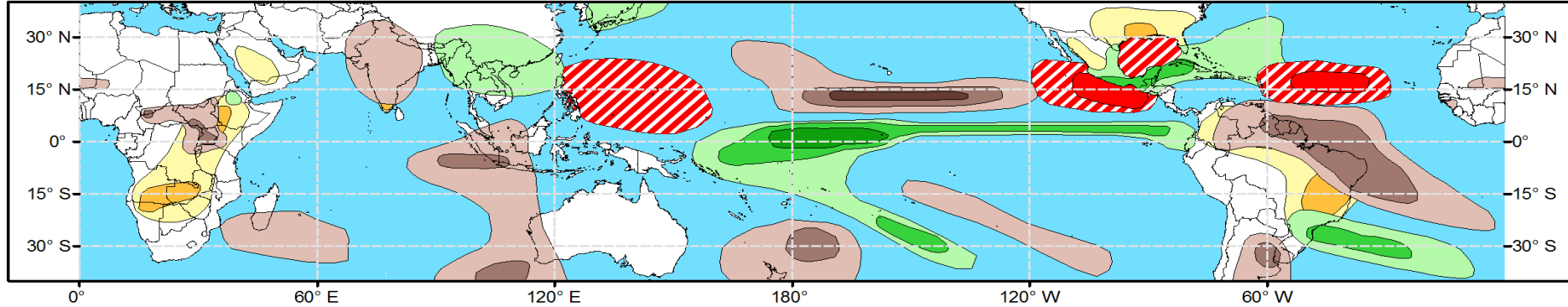
GTH Outlook:



Global Tropics Hazards Outlook Climate Prediction Center

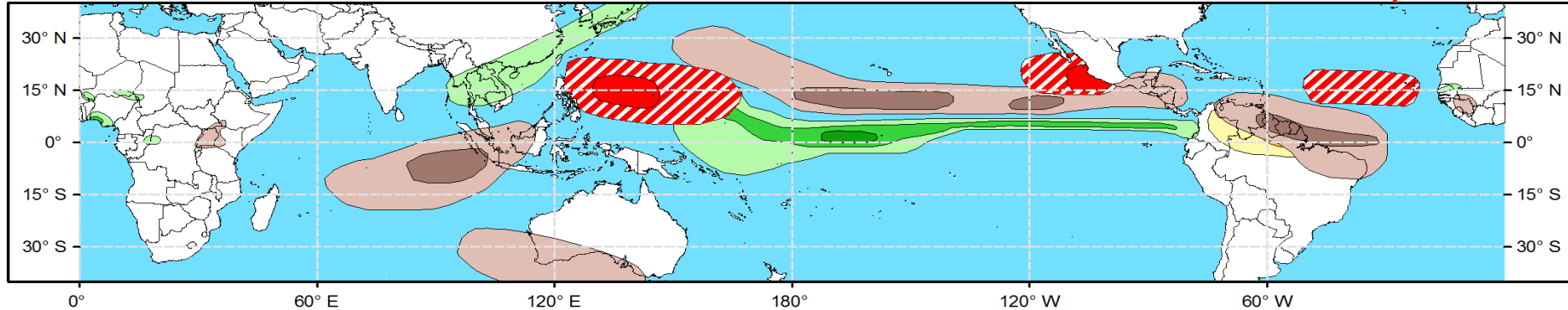


Week 2 - Valid: Aug 23, 2023 - Aug 29, 2023



Week 3 - Valid: Aug 30, 2023 - Sep 05, 2023

**** Experimental ****



**Tropical Cyclone (TC)
Formation Probability**



>20% >40% >60%

Tropical Depression (TD)
or greater strength

**Above-Average
Rainfall Probability**



>50% >65% >80%

Weekly total rainfall in the
Upper third of the historical range

**Below-Average
Rainfall Probability**



>50% >65% >80%

Weekly total rainfall in the
Lower third of the historical range

**Above-Average
Temperatures Probability**



>50% >65% >80%

7-day max temperatures in the
Upper third of the historical range

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Temperatures Probability**



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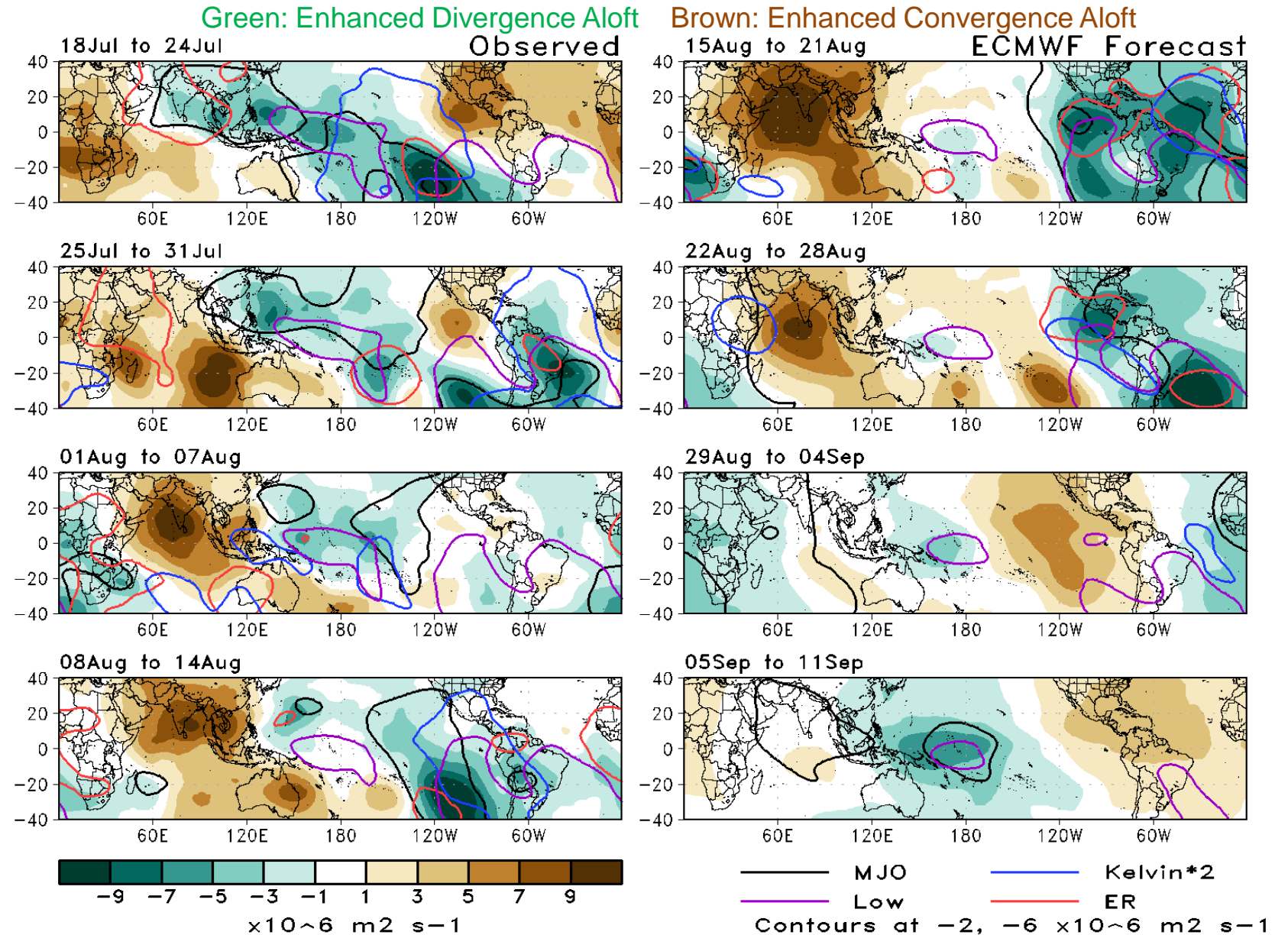
Issued: 08/15/2023

Forecaster: Barandiaran

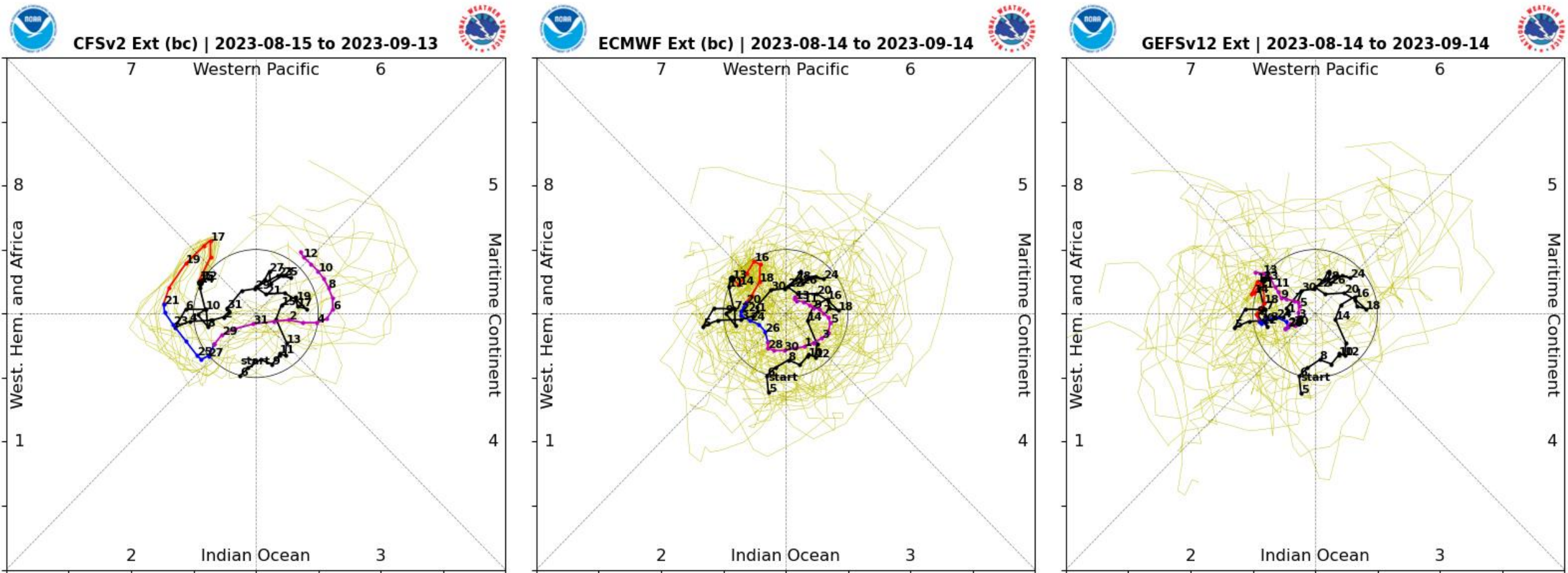
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200-hPa Velocity Potential Anomaly Maps:

- The last month has seen a rather disorganized structure to global tropical convection, though a wave-1 pattern started to emerge in the last week.
- Through the week-2 forecast period a fairly robust wave-1 pattern is favored, placing the MJO in phase 8.
- Weeks 3&4 depict an eastward propagation of the enhanced convective envelope portrayed in weeks 1&2, though with weaker amplitude.

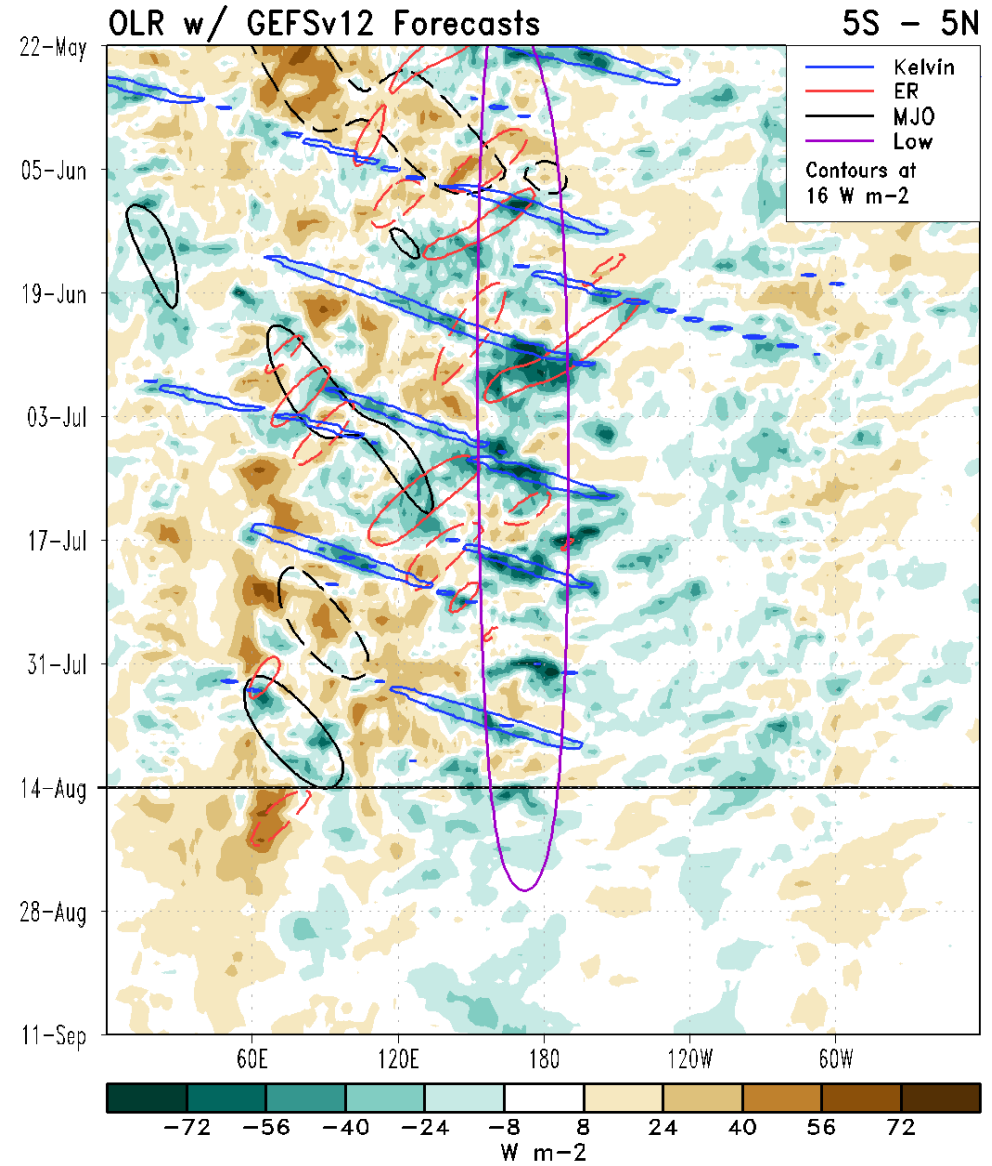
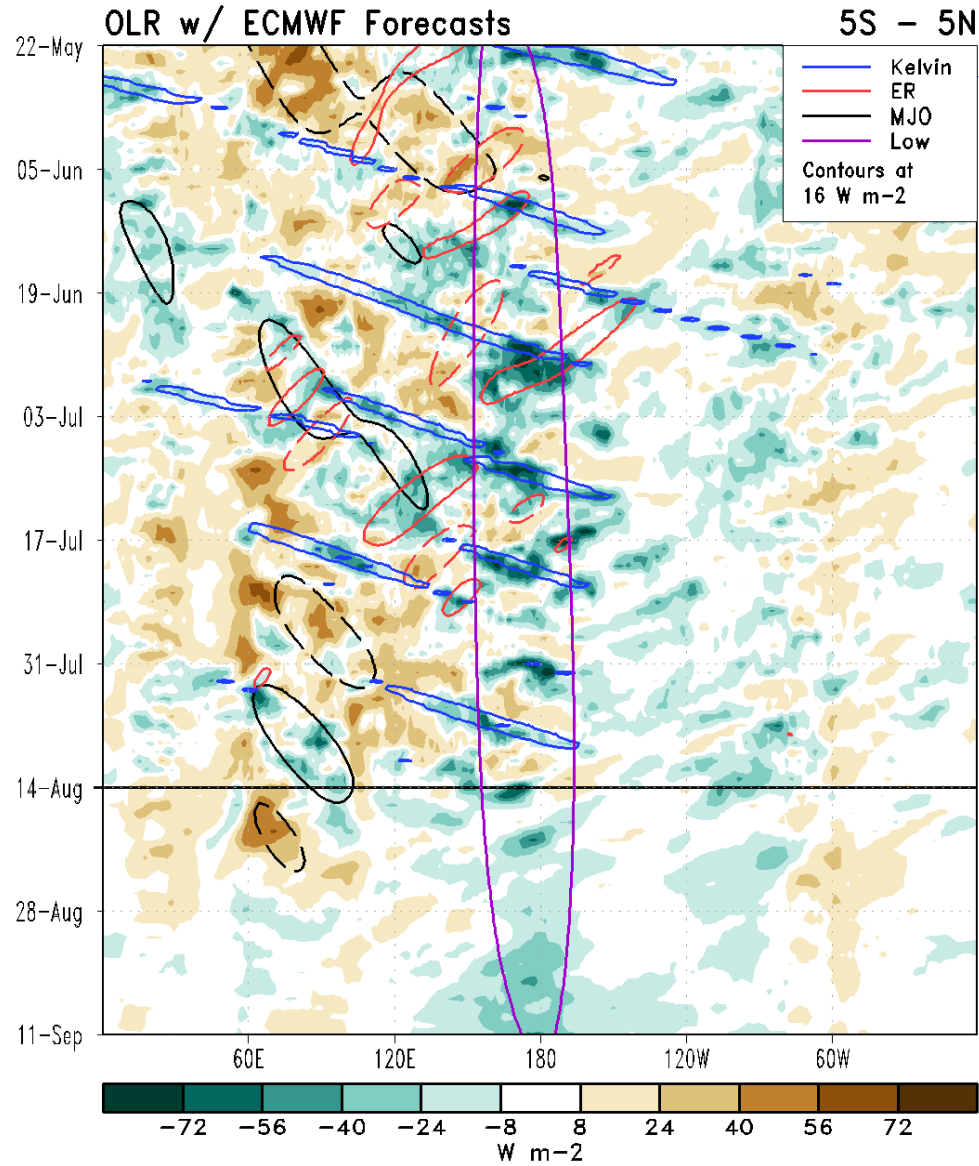


RMM Index Observations & Forecasts:



- RMM forecasts depict a continued weak MJO regime. CFS, GFS and ECMWF all favor a slight retrogression of enhanced convection over the Western Hemisphere during week-1 before resuming a more typical eastward movement in week-2 and beyond.
- While some extended range solutions favor some reemergence of the MJO signal, there is a lot of ensemble spread and the ensemble means remain within the unit circle, limiting forecast confidence later in August.

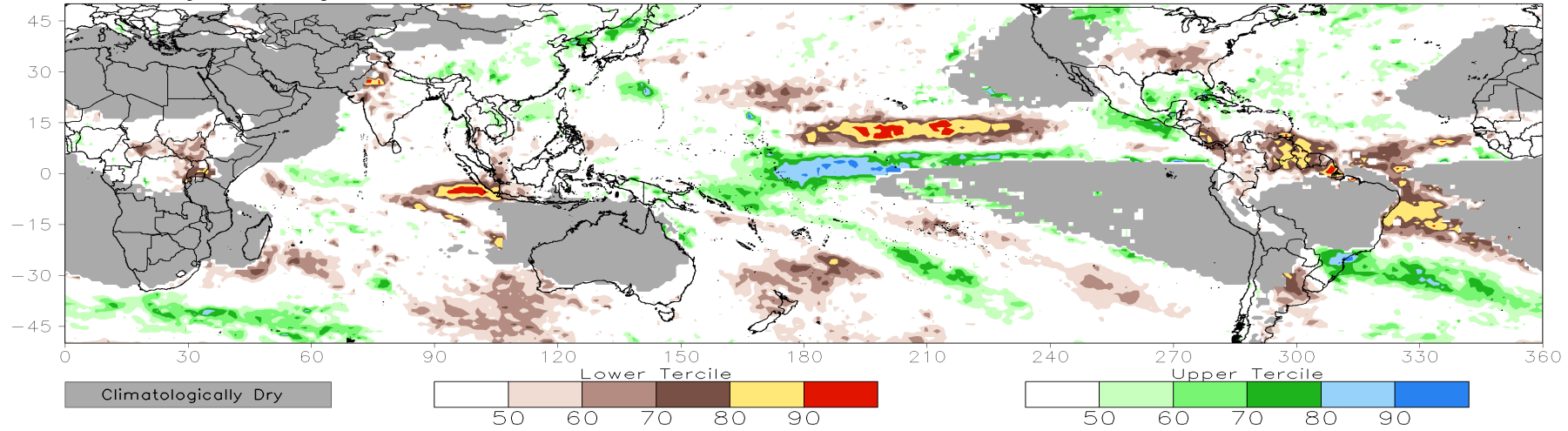
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

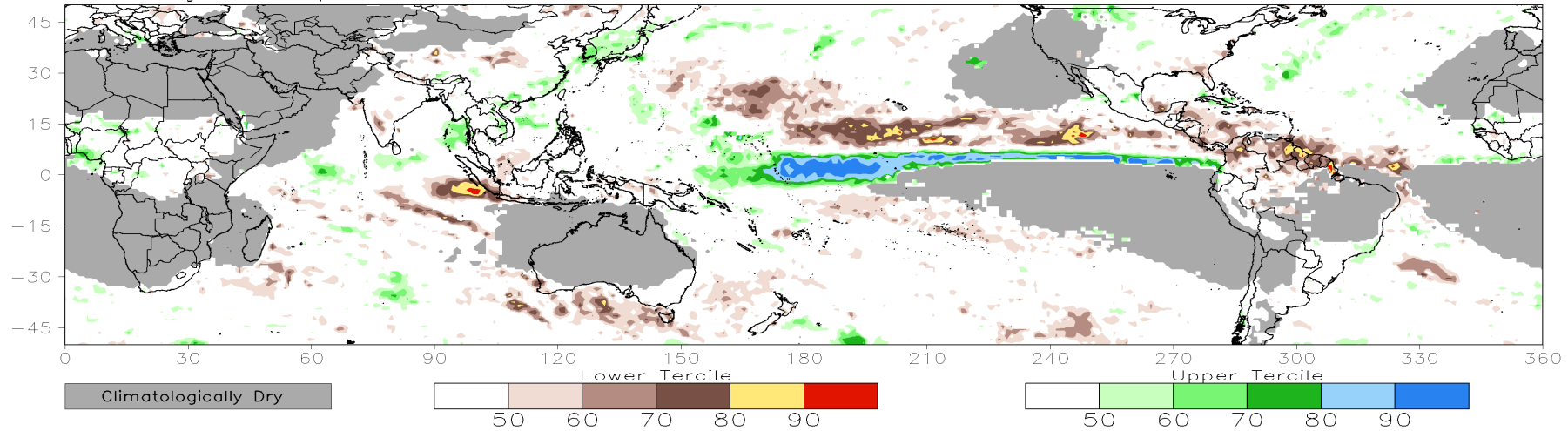
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 23Aug2023–29Aug2023



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

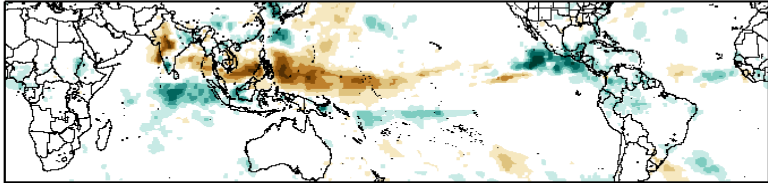
Valid: 30Aug2023–05Sep2023



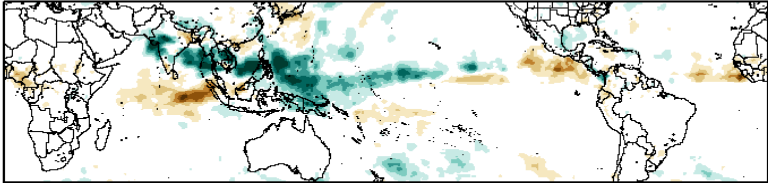
Historical Precipitation Anomalies By MJO Phase:

JAS MJO Composite: GPCP1DD (mm/day)

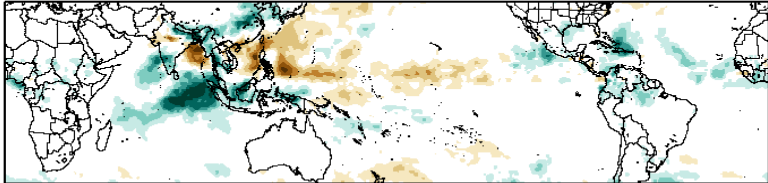
Phase 1



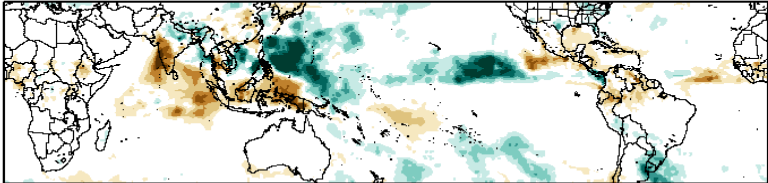
Phase 5



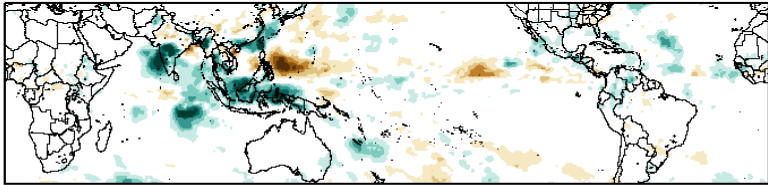
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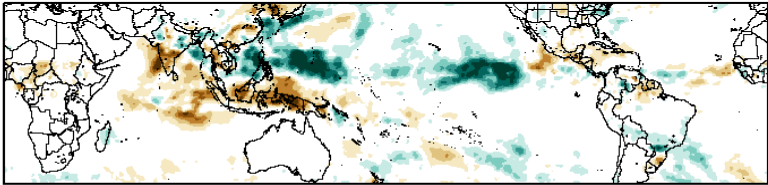
Phase 6



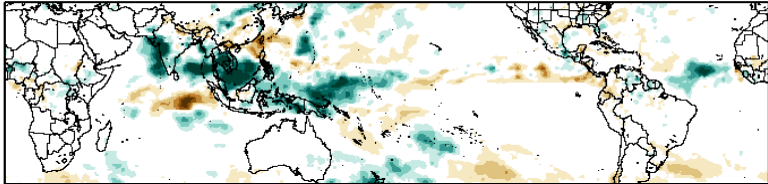
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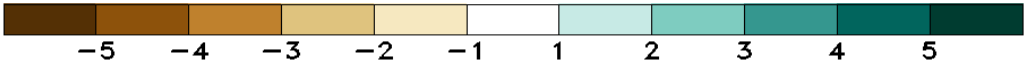
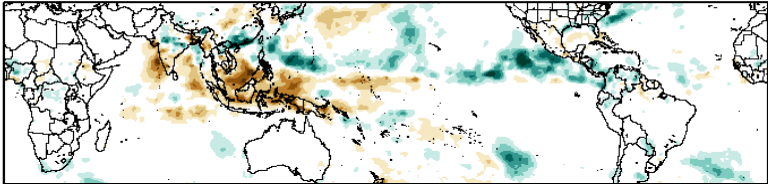
Phase 7



Phase 4

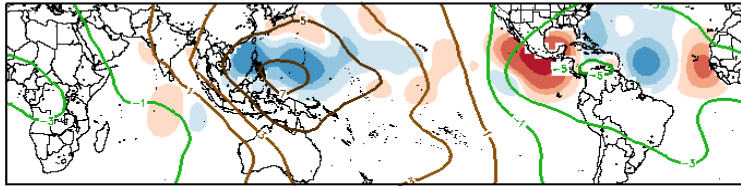


Phase 8

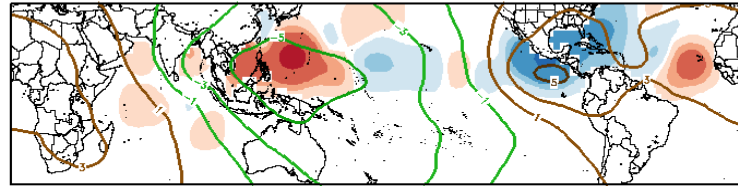


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

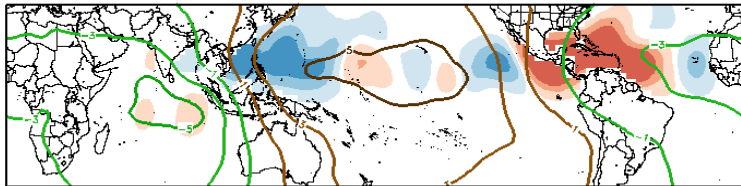
JAS MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ JAS CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



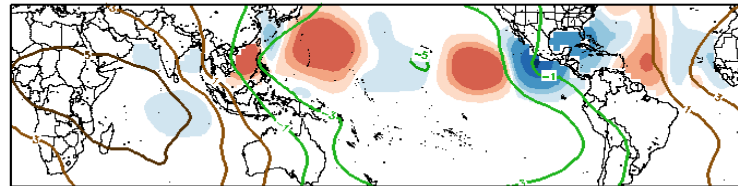
Phase 1



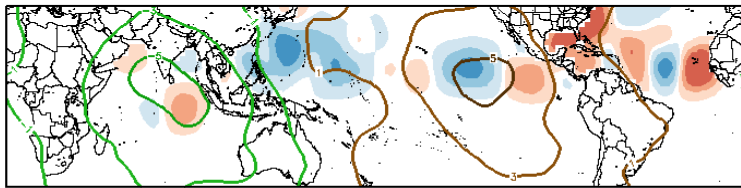
Phase 5



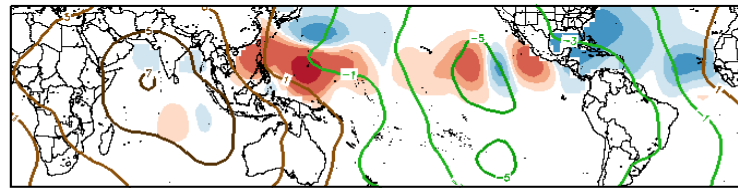
Phase 2



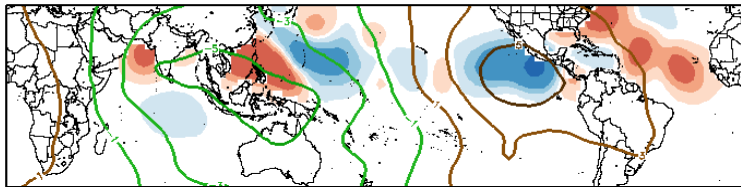
Phase 6



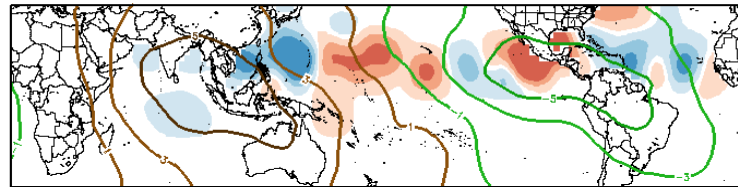
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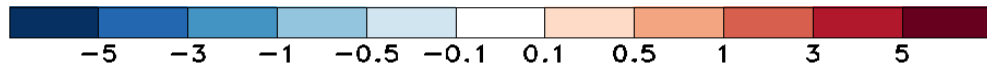
Phase 7



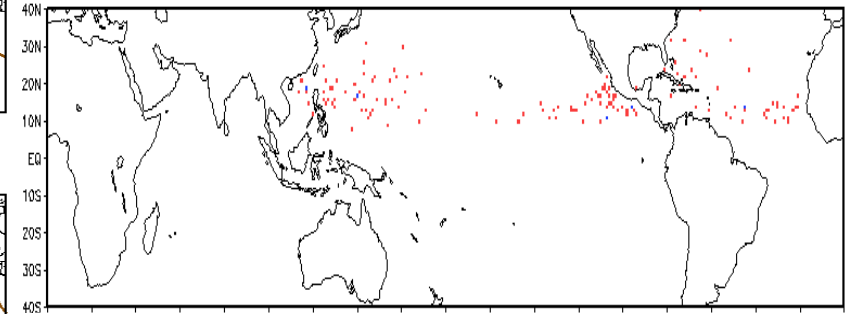
Phase 4



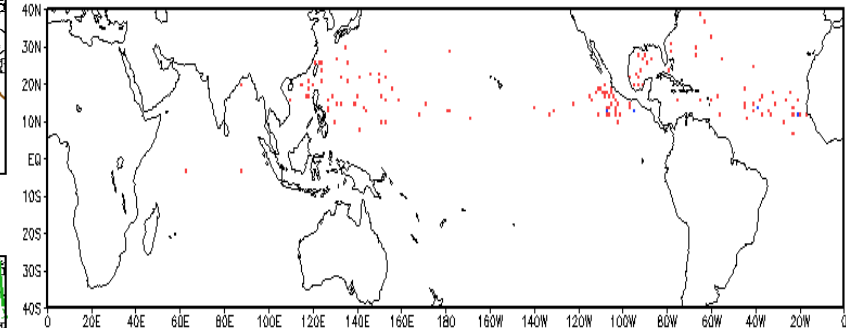
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 0823 to 0829



Observed TC Genesis, 1979-2021
7-day Period 0830 to 0905

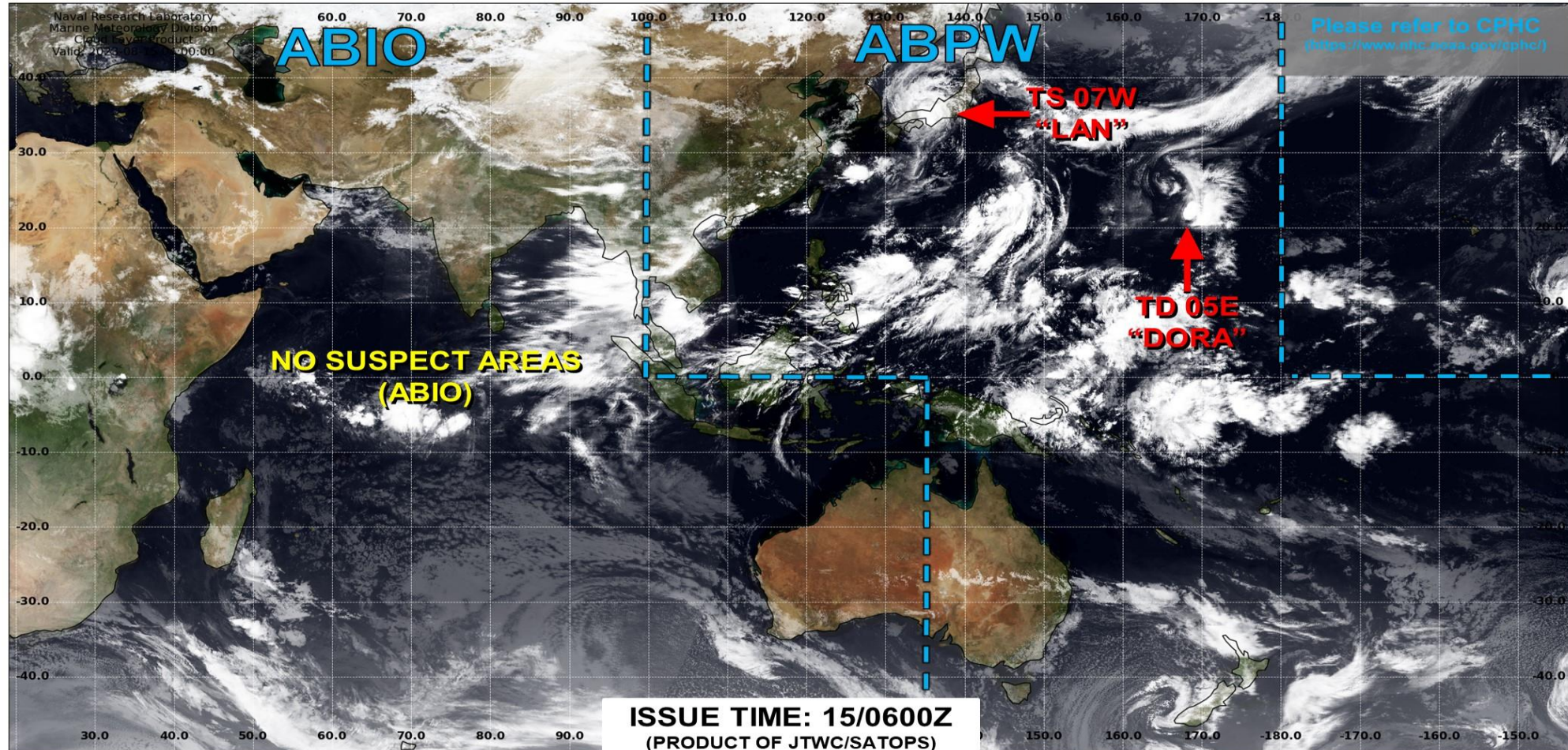


Experimental

Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours



TC development likely within 24 hours (Reference TCFA)



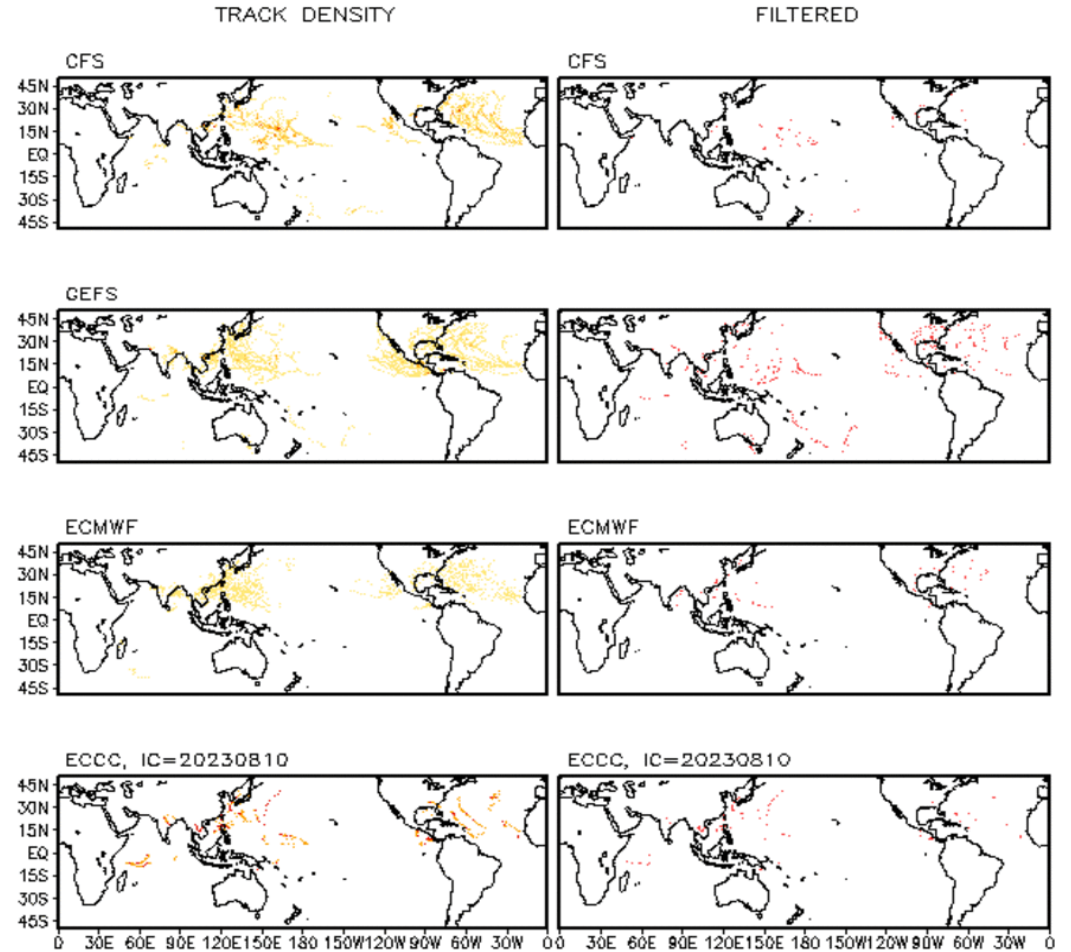
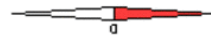
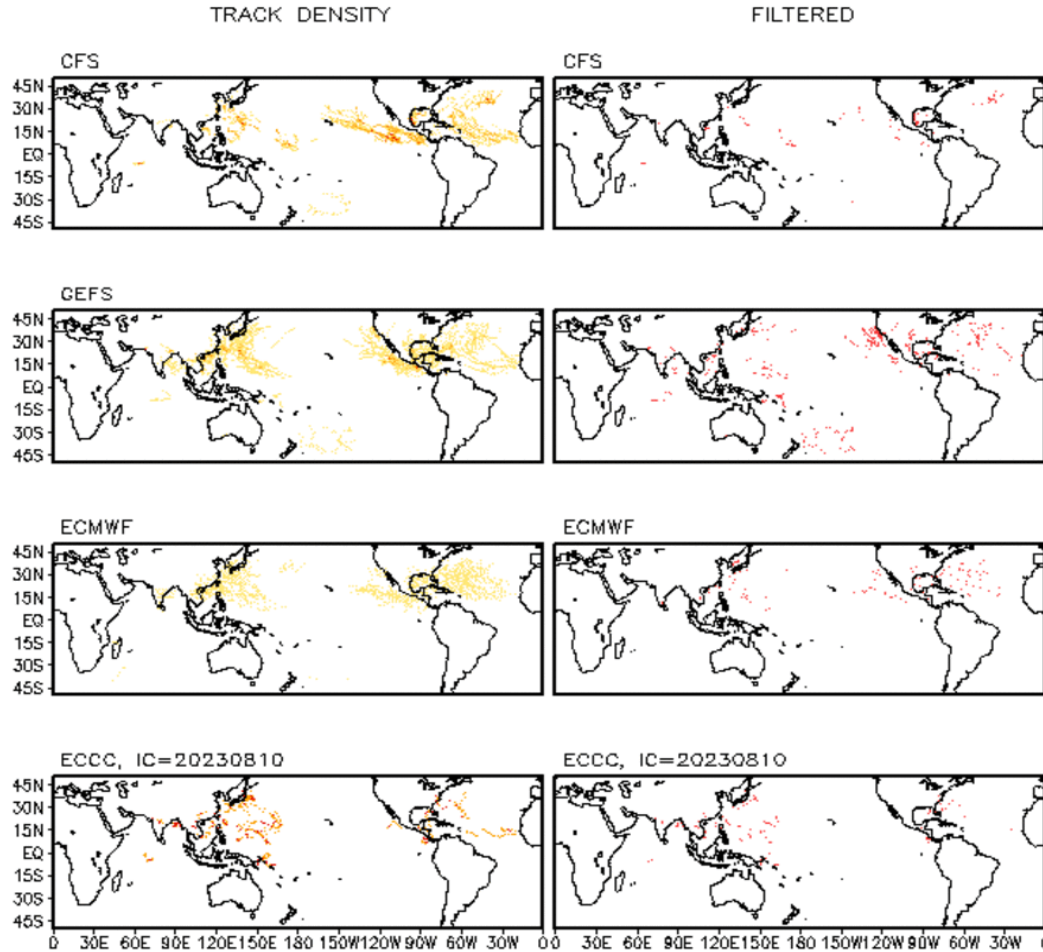
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



Multi-Model TC Track Densities: Weeks 2+3

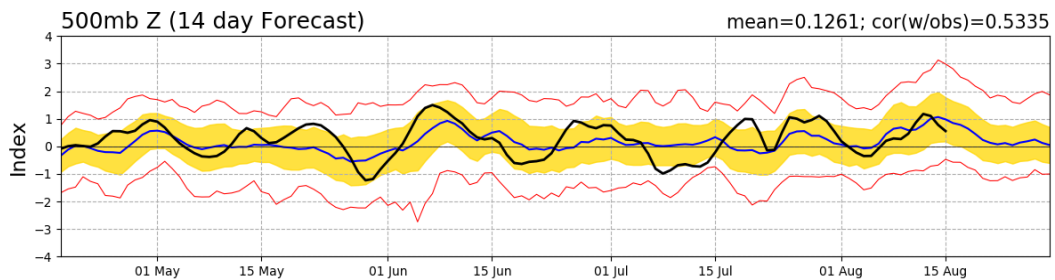
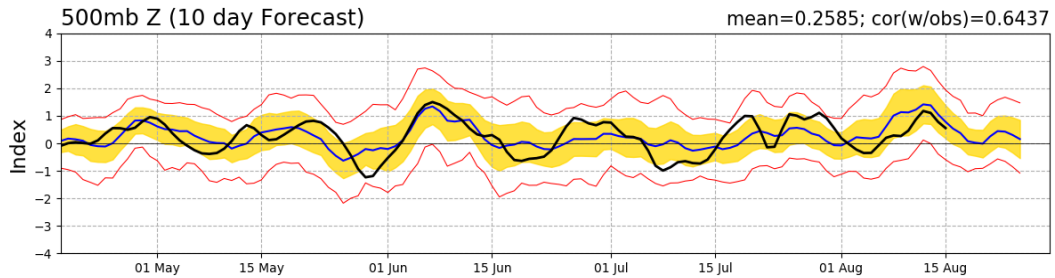
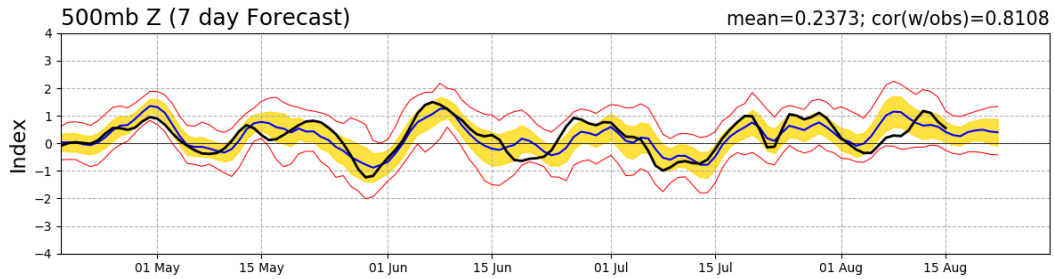
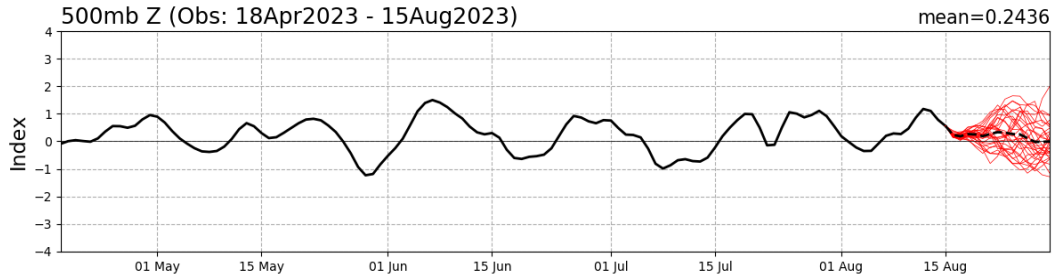
Storm Track Density Distribution, IC=20230814
Week 2 Forecast: 0823-0829

Storm Track Density Distribution, IC=20230814
Week 3 Forecast: 0830-0905

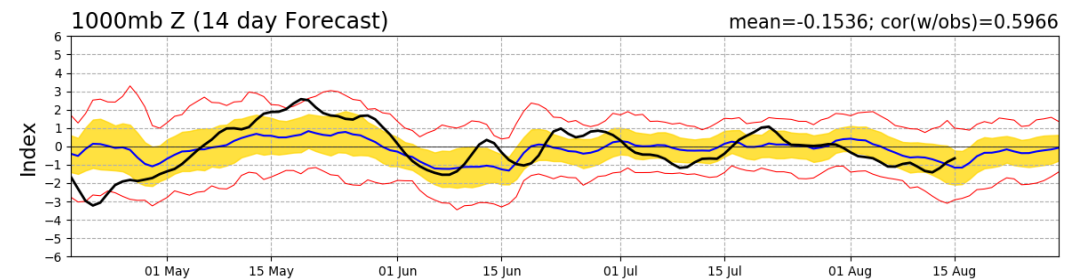
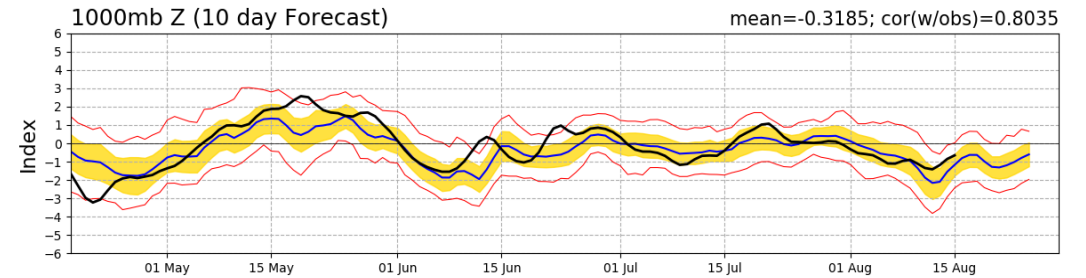
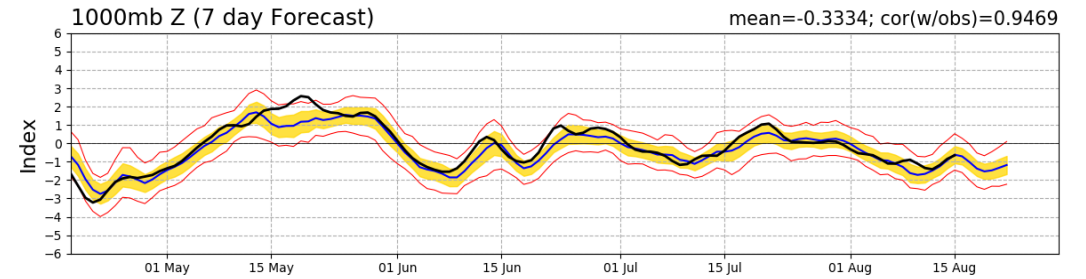
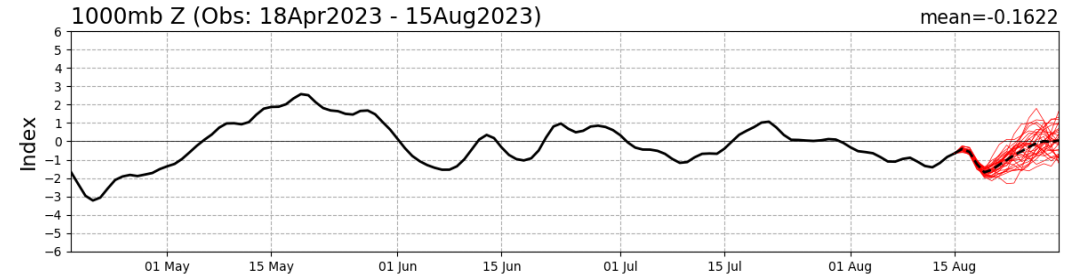


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts



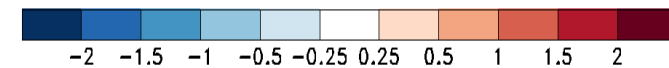
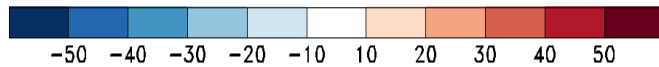
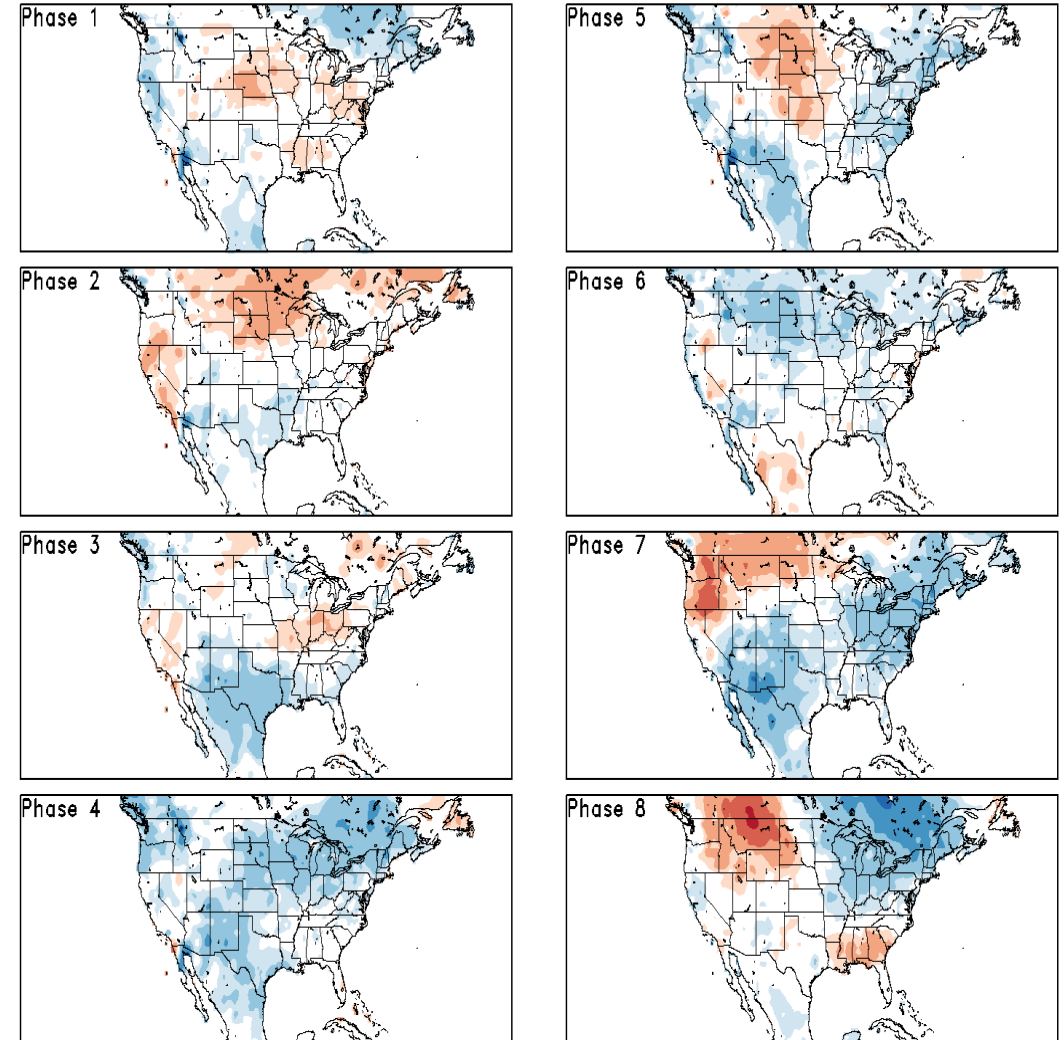
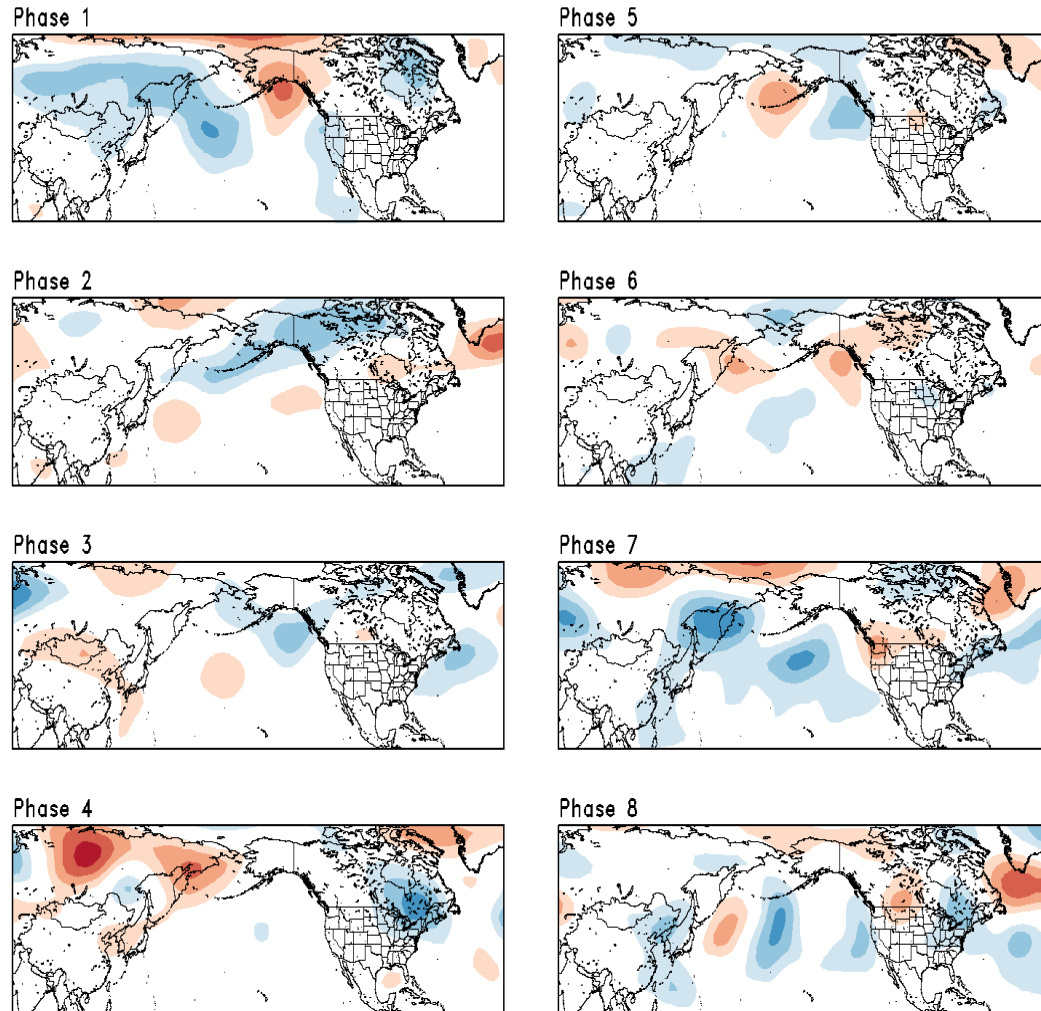
AO Index: Observed & GEFS Forecasts



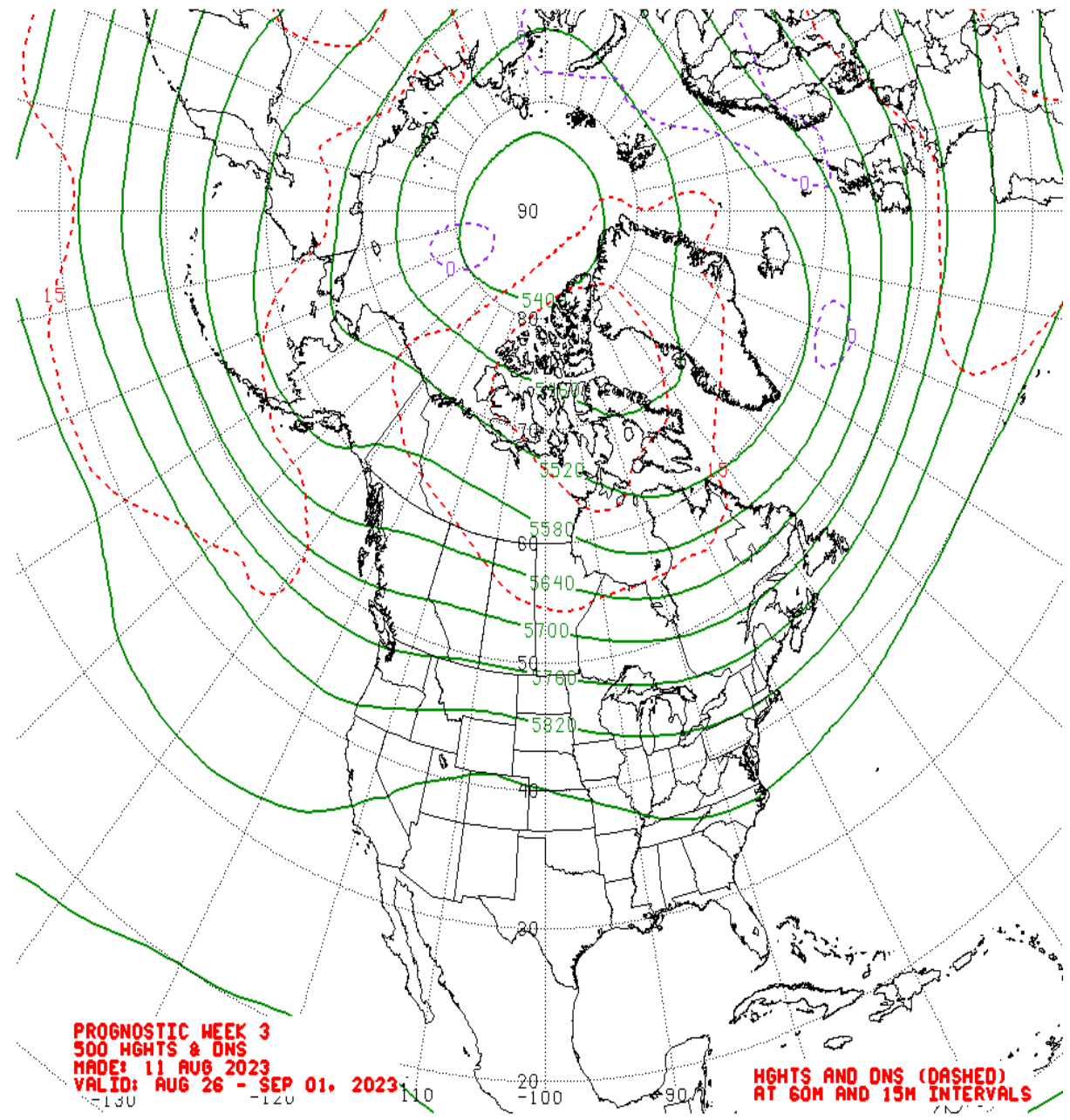
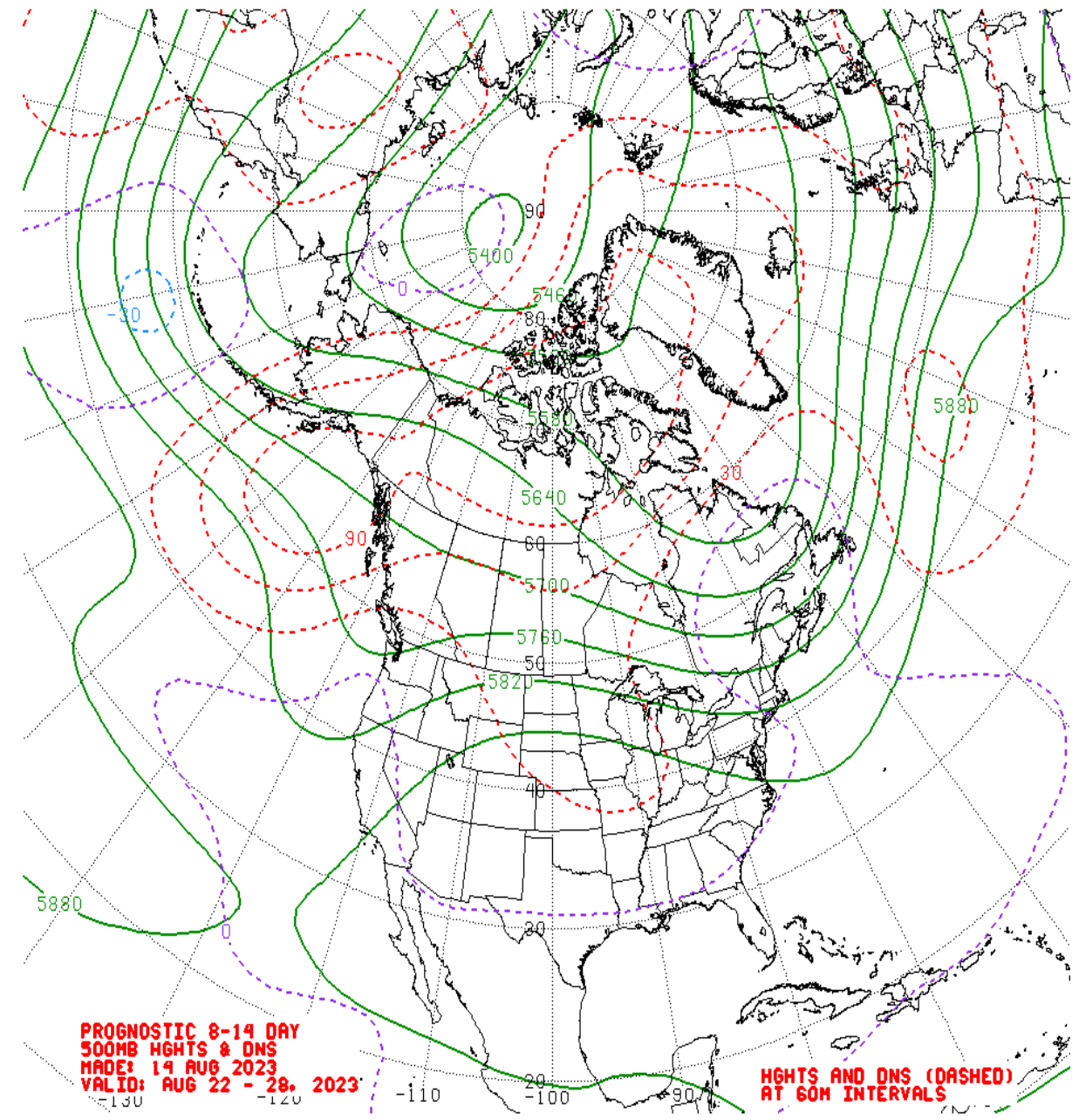
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

JAS MJO Composite: CDAS 500-hPa Height (m)

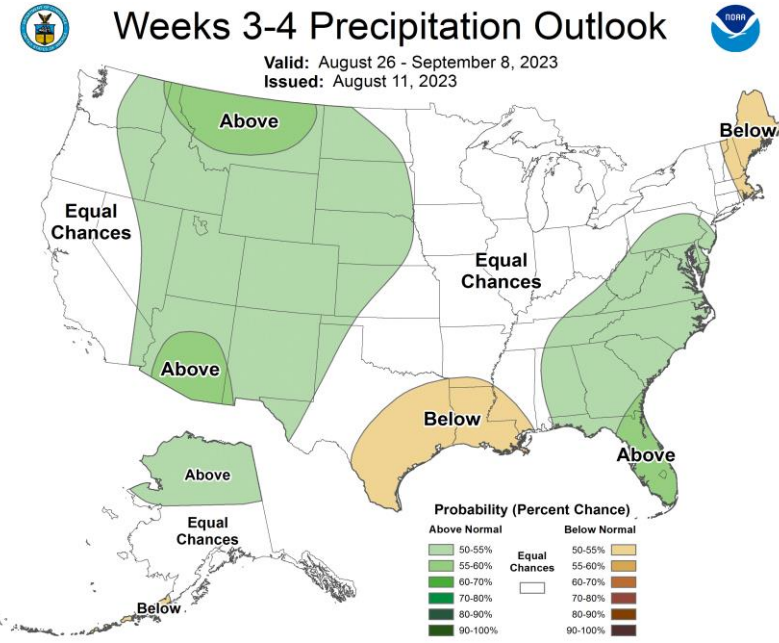
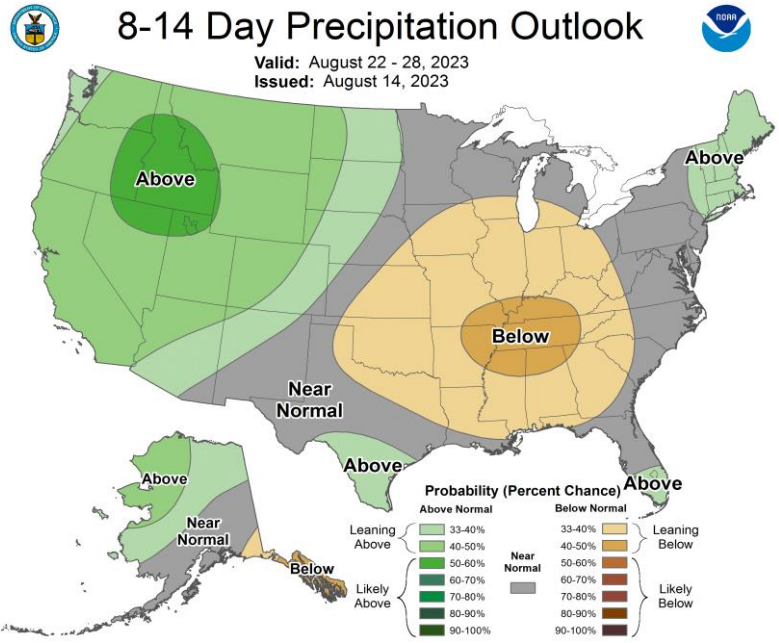
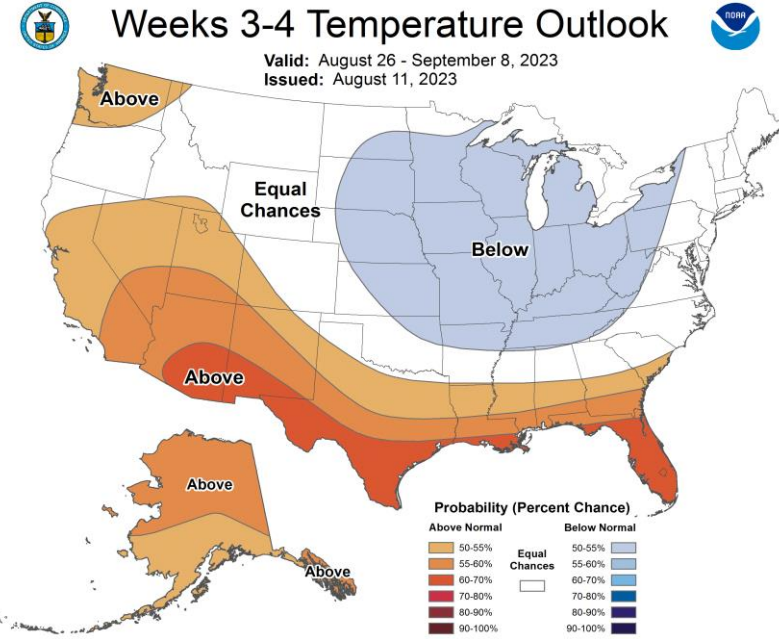
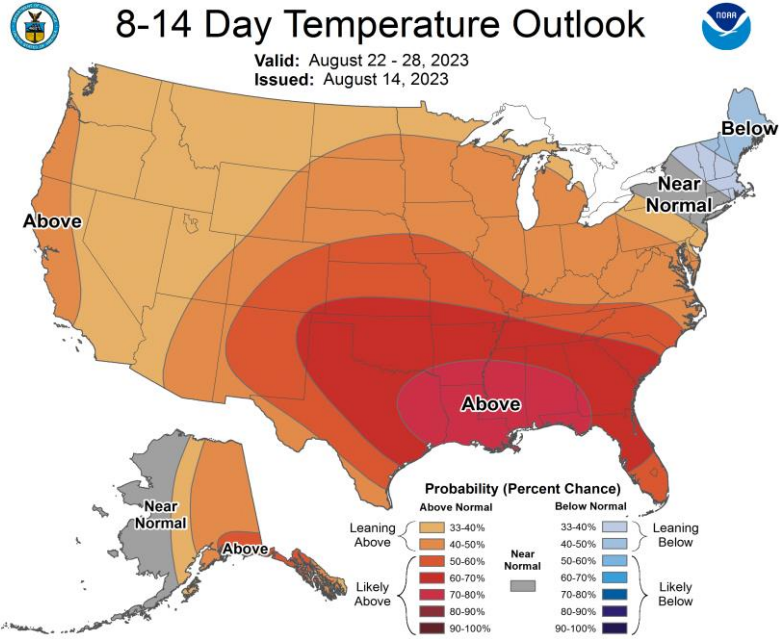
JAS MJO Composite: GLBT (degC)



Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



Official Temperature & Precipitation Forecasts:



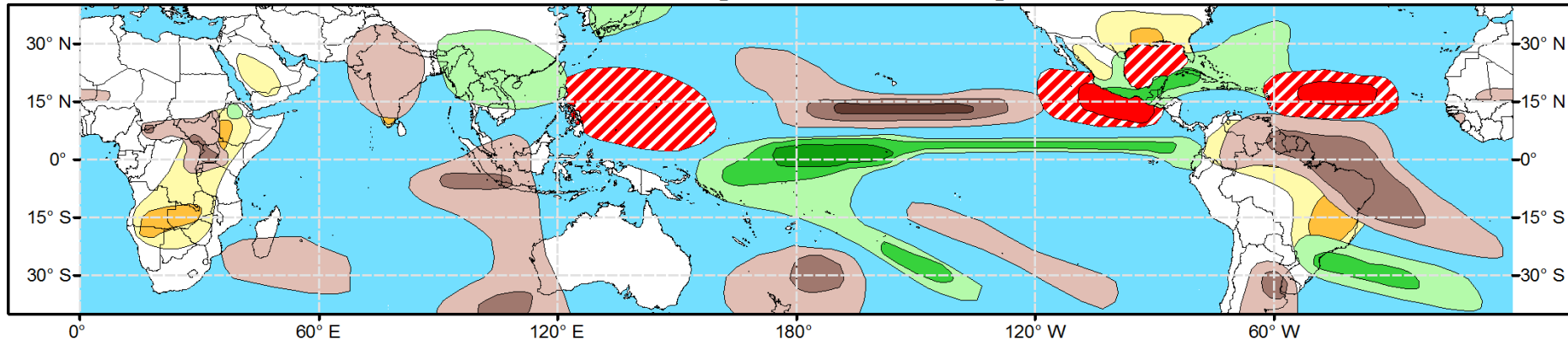


Global Tropics Hazards Outlook

Climate Prediction Center

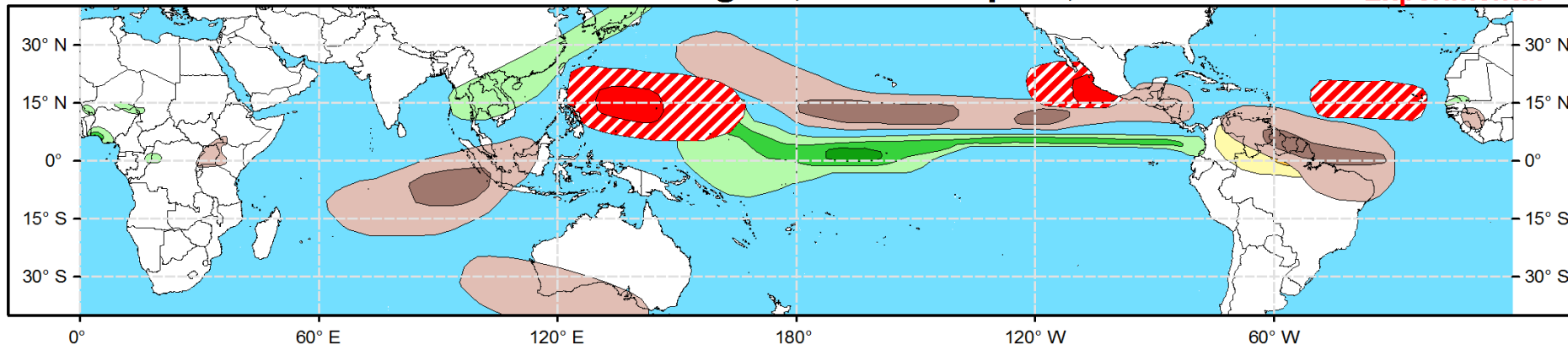


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